

1        **SYSTEM AND METHOD FOR AGGREGATING AND MANAGING CLIENT**  
2                    **ORDERS USING BARCODE SCANNING TECHNOLOGY**

3  
4        **FIELD OF THE INVENTION**

5            The present invention relates to the field of managing  
6 client accounts and orders using software. More  
7 specifically, the present invention provides an improved  
8 system and method for aggregating and managing clients'  
9 orders using a single software application.

10  
11        **PARENT CASE TEXT**

12            This application claims the benefit of provisional  
13 application No. 60/487,238 filed 07/16/2003.

14  
15        **BACKGROUND**

16            Integrating barcode scanning technology into existing  
17 e-commerce websites is painfully long and complex. It  
18 requires an extensive integration process and many changes  
19 to the e-commerce application-provider. Any user wishing  
20 to utilize the barcode scanner services and products would  
21 need to first register with the providing company and  
22 obtain the required software and hardware. Once they have  
23 the software, the user must go through an extensive and  
24 sometimes very complicated setup process. Many changes are

1 necessary in tight network configurations in order to allow  
2 users to install software on their machines. Also, the  
3 software consumes system resources and requires a constant  
4 internet connection. These are all factors that contribute  
5 to degrade performance of a user's machine unnecessarily.

6 Existing e-commerce websites desiring to upgrade their  
7 websites would need to undergo changes and modifications on  
8 their end to handle data being passed to them from this  
9 software. The e-commerce website needs to add complex  
10 processes in order to handle and parse this data in  
11 addition to their current processes. For large e-commerce  
12 websites, this can mean causing parts (or even the whole)  
13 of their site to be rendered unoperational if not carefully  
14 planned and implemented.

15 The process of ordering using barcode scanners takes  
16 the users away from their primary dealer's site. Since  
17 this process would generally be handled by a stand-alone  
18 software application, there is no relation between the two  
19 distinct methods (traditional online ordering and ordering  
20 using barcodes). It is very difficult to monitor the  
21 environment in which the user is working and entering their  
22 order. Since the user's atmosphere is different, there is  
23 no correlation in the user's mind regarding this service

1 and the dealer's service; the two methods of ordering  
2 appear to be completely separate.

3 In addition, any changes made to the existing e-  
4 commerce platform affects the software application, thus  
5 making the software unoperational and useless. This places  
6 a very strict limitation as far as services the e-commerce  
7 platform can make available to their customers, thereby  
8 prohibiting growth.

9 If a user desires to order from multiple vendors which  
10 employ barcode scanning technology on their e-commerce  
11 website, the user must typically install a separate  
12 application and software for each vendor. Additionally,  
13 the barcode scanner require by each vendor may be  
14 different, thereby resulting in additional complexity and  
15 cost.

16 For some companies, orders are so voluminous and  
17 complex that they often employ an outside company for  
18 ordering certain items, such as office supplies. These  
19 companies often have multiple clients which requires a  
20 great deal of paperwork to track which orders belong to  
21 which clients. Also, each client may require supplies from  
22 several different vendors which further complicates  
23 paperwork and ordering.

1       Barcode scanning technology may be utilized by these  
2   ordering companies to increase the speed at which orders  
3   can be placed with some vendors. However, not every vendor  
4   may employ barcode scanning technology on their e-commerce  
5   website.

6       Therefore, there clearly exists a need for a system  
7   and method which enables users to place orders from  
8   multiple vendors using a single software application and  
9   barcode scanner. Such a system would allow a vendor to  
10   utilize barcode scanning technology to order from multiple  
11   vendors without requiring each vendor to employ barcode  
12   scanning technology as part of their e-commerce website.

13

#### 14   **SUMMARY OF THE INVENTION**

15       The present invention is designed to allow salespeople  
16   to take orders from their clients by scanning product codes  
17   directly from the client's stockroom. The system allows  
18   the user to create and print barcodes for his/her clients.  
19   The sales person is the user of the application and can  
20   access the application through a user account. The  
21   application allows the creation of several user accounts to  
22   allow several salespeople to access the application on the  
23   same system. Each salesperson can create client accounts  
24   for his/her clientele and these accounts can only be

1 accessed by the user account that created them. Each  
2 client account is associated with a barcode which can be  
3 printed using the application.

4 In order to process orders for clients the user must  
5 scan the barcode for the client followed by the barcodes  
6 for the items. The barcode scanner may be any type of  
7 barcode scanner which is currently available. The most  
8 common type of barcode scanners are laser-based scanners.  
9 These scanners have the advantage that they can scan data  
10 very quickly. However, these types of scanners are usually  
11 only able to decode a few types of barcode formats.

12 Optical barcode scanners, such as are disclosed in co-  
13 pending U.S. Application No. 60/487,237 entitled  
14 "ScanZoom," have the advantage that their decoding is  
15 controlled by software. Thus, optical barcode scanners can  
16 be programmed to decode almost any type of barcode and can  
17 be updated to decode newer barcode formats.

18 Additionally, if a mobile device is utilized as a  
19 barcode scanner, the scanned barcode information can later  
20 be transmitted to the processing application wirelessly,  
21 thereby eliminating the need to connect the barcode scanner  
22 directly to the computer.

23 The application allows the user to upload all the  
24 orders in a single click. The uploaded items can be

1 reviewed in the temporary shopping cart in the application  
2 where they are displayed in a categorized manner based on  
3 the client. The user can then choose to add the orders to  
4 the shopping cart at the vendors' websites one by one or  
5 add all the orders in a single click by using the Quick  
6 Cart feature.

7 The Quick Cart feature allows the user to send the  
8 products scanned for each client to their respective  
9 shopping carts in a single click. This opens up the  
10 default browser windows one for each client with the  
11 shopping cart of the client displayed.

12 The present invention also provides the user the  
13 ability to manage and print lists of items. The lists are  
14 generated on-the-fly by the software.

15 The present invention can also be adapted to work with  
16 Radio Frequency Identification ("RFID") labeling systems.  
17 In this scenario, the barcode scanner would simply be  
18 replaced with a RFID scanner. The only other change to the  
19 system that would have to occur is that the barcode  
20 information contained in the product databases would have  
21 to be replaced with the corresponding RFID tag information.  
22 A similar process can be utilized to allow the system of  
23 the present invention to function with any tagging or  
24 labeling system available or which may become available.

1           Therefore, it is an object of the present invention to  
2 provide a client management system for managing orders from  
3 multiple clients utilizing a single application.

4           It is an additional object of the present invention to  
5 provide an ordering system which can utilize the standard  
6 barcodes located on most products for ordering.

7           Another object of the present invention is to provide  
8 a client management system capable of utilizing both  
9 standard and proprietary barcode formats.

10          It is yet another object of the present invention to  
11 provide a client management system which requires minimum  
12 modification of the vendors' existing e-commerce website.

13          An additional object of the present invention is to  
14 provide a client management system which uses clients'  
15 predetermined preferences to automatically sort products  
16 and place orders with different vendors.

17          It is an additional object of the present invention to  
18 provide a client management system which is able to create  
19 a shopping cart list for multiple client orders in real  
20 time.

21          These and other objects of the present will be made  
22 clearer with reference to the following detailed  
23 description and accompanying drawings.

24

1    **BRIEF DESCRIPTION OF THE DRAWINGS**

2           FIG. 1 depicts the system architecture for use with  
3 the preferred embodiment of the invention.

4           FIG. 2 depicts a flowchart showing the steps utilized  
5 for scanning and order processing in the preferred  
6 embodiment of the invention.

7           FIG. 2A depicts an expanded flowchart of the step  
8 utilized to replace quantity barcodes shown in FIG. 2.

9           FIG. 2B depicts an expanded flowchart of the vendor  
10 designation step shown in FIG. 2.

11          FIG. 3 depicts an alternate embodiment of the present  
12 invention in which client identification barcodes and  
13 vendor identification barcodes are utilized.

14

15    **DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT(S)**

16          The following presents a detailed description of a  
17 preferred embodiment (as well as some alternative  
18 embodiments) of the present invention. However, it should  
19 be apparent to one skilled in the art that the described  
20 embodiment may be modified in form and content to be  
21 optimized for a wide variety of situations.

22          Referring first to FIG. 1, shown is a system diagram  
23 depicting the hardware configuration for use with the  
24 preferred embodiment of the present invention. In this



1 figure, data carrier 101 is shown containing barcodes 102  
2 and 103. Barcode 102 is a client identification barcode  
3 which is assigned to each client by the user. Barcode 102  
4 is chosen to allow the software to later be able to  
5 identify which orders belong to which client. Barcode 103  
6 is typically a barcode encoded with a standard symbology  
7 (e.g., UPC, ISBN, etc.) which and may either be a one or  
8 two-dimensional barcode. However, it should be apparent to  
9 one skilled in the art that barcode 103 may be any machine  
10 readable code. A user utilizes scanner 105 to scan  
11 barcodes 102 and 103. Scanner 105 converts the barcode  
12 information into a string of characters which is  
13 recognizable by a computer.

14 Scanner 105 may be any type of scanner capable of  
15 scanning barcodes. The most widely used type of barcode  
16 scanners are laser-based scanners which are adapted to scan  
17 one-dimensional barcodes. Barcode scanners designed to  
18 scan two-dimensional barcodes are also currently available  
19 but are more expensive than their one-dimensional  
20 counterparts.

21 Scanner 105 may also utilize scanners which use  
22 "optical intelligence" which is described in co-pending  
23 U.S. Provisional Application No. 60/487,237. Optical  
24 intelligence allows any device (mobile or stationary)

1. equipped with a digital camera to function as a barcode  
2 scanner.

3       Cradle 107 is used to connect scanner 105 to computer  
4 109. Alternatively, scanner 105 may connect directly to  
5 computer 109 via a direct cable connection using one of  
6 computer 109's available ports (e.g., serial, USB, etc.).  
7 Scanner 105 may also utilize a wireless connection to  
8 connect to computer 109. For example, in the case where  
9 scanner 105 is a mobile device utilizing optical  
10 intelligence, such as a camera phone, all of the barcode  
11 information can be transmitted to computer 109 wirelessly  
12 utilizing a wireless connection (Bluetooth, WiFi, cellular  
13 network, etc.). Computer 109 contains the software which  
14 reads the information from barcode scanner 105 and  
15 correctly processes it.

16       To function properly, the barcode processing software  
17 located on computer 109 requires the use of one or more  
18 databases. As shown in FIG. 1, computer 109 contains  
19 quantity barcode database 110, individual account database  
20 111, client database 112, vendor database 113,  
21 identification barcode database 115, and vendor product  
22 database 117. Quantity database 110 is a lookup table  
23 which indicates the sum to which each quantity barcode  
24 corresponds. Account database 111 stores the login

1 information of the user required to access each of the  
2 selected vendor's website for each client. Client database  
3 112 identifies the client identification barcode which  
4 corresponds to each client. Vendor database 113 is a  
5 database which stores the information required to access  
6 each vendor's website. Vendor identification barcode  
7 database 115 contains information required by the software  
8 to decode the quantity scanned from quantity barcodes.  
9 Vendor product databases 117a - 117n contain a list of the  
10 products and associated barcode numbers for each product of  
11 each vendor. The function and purpose of each database in  
12 the processing of the information acquired via scanner 105  
13 will be described in FIG. 2.

14 Internet 119 is used to connect computer 109 to vendor  
15 websites 121a - 121n which allow for the aggregate  
16 ordering. The internet connection may either be permanent,  
17 such as a DSL or cable connection, or provided through a  
18 modem.

19 Next referring to FIG. 2, shown is a flowchart  
20 depicting the steps utilized for aggregate ordering in the  
21 preferred embodiment of the present invention. In the  
22 preferred embodiment, a user first scans the client  
23 identification barcode of the first client to be serviced  
24 in step 200. The client identification barcode is a unique

1 barcode which is assigned to each client in the system of  
2 the present invention.

3       After the client identification barcode has been  
4 scanned, the user scans all of the products the user wishes  
5 to order in step 201 using barcode scanner 105. To  
6 accomplish this, the user can either scan the standard  
7 barcodes which are located on most products or the user can  
8 utilize special catalogues provided by different vendors  
9 which contain the printed barcode of each item next to each  
10 product. If more than one quantity of a certain product is  
11 desired, a user may utilize quantity barcodes to indicate  
12 the desired quantity of items. Quantity barcodes are  
13 utilized by first scanning the barcode of the product and  
14 then scanning the quantity barcode(s).

15       Once all of the products have been scanned in step  
16 201, the user uploads the scanned barcode information to  
17 computer 109 in step 203 utilizing cradle 107.  
18 Alternatively, scanner 105 could be connected directly to  
19 computer 109 through a wired or wireless connection. The  
20 software located on computer 109 facilitates the uploading  
21 of the barcode information by synching scanner 105 with  
22 computer 109. The barcode information is uploaded to the  
23 computer as a character string, wherein different portions

1 of the character string correspond to the different  
2 barcodes scanned.

3 If RFID tags are utilized instead of barcodes, scanner  
4 105 would be a RFID scanner. The process of uploading the  
5 information to computer 109 would occur in a similar manner  
6 to uploading barcode information.

7 After the barcode information has been uploaded to  
8 computer 109, the software next processes the quantity  
9 barcodes in step 205. As shown in FIG. 2A, the software  
10 first searches the uploaded barcode information for all  
11 instances of quantity barcodes in step 221 and flags the  
12 results. The software next uses quantity barcode database  
13 110 to associate each quantity barcode with a particular  
14 sum in step 223. The software then systematically replaces  
15 each quantity barcode with the number of copies of the  
16 product barcode which immediately precedes it in step 225.  
17 For example, if the software found a barcode for a heavy-  
18 duty stapler followed by a quantity barcode indicating a  
19 quantity of five, the software would replace the quantity  
20 barcode with four additional copies of the barcode for the  
21 heavy-duty stapler.

22 Referring back to FIG. 2, the software next creates a  
23 shopping list for each of the clients. The software does  
24 this by first scanning the uploaded barcode information for

1 the first two occurrences of client identification  
2 barcodes. All of the items which are contained between  
3 these two barcodes are added to a shopping cart list  
4 assigned to the first client. Then, for each barcode in  
5 the shopping list, the software assigns it to a particular  
6 vendor based upon the user's predetermined vendor  
7 preferences in step 207. The order of preference for the  
8 vendors is stored in vendor database 113. The software  
9 accomplishes this by processing each barcode individually.  
10 As shown in FIG. 2B, each of the barcodes is first checked  
11 to see if it is located in the first preferred vendor  
12 product database 117a in step 241. All of the barcodes  
13 found located in database 117a are assigned a designation  
14 to indicate that the items correspond to the first  
15 preferred vendor in step 243. If all of the barcodes are  
16 found in the first preferred vendor database 117a, the  
17 software proceeds to step 209. However, if some barcodes  
18 are not found, the software next searches second preferred  
19 vendor database 117b and assigns a second designation to  
20 the items found in that database which were not found in  
21 the first preferred vendor database 117a. This process is  
22 repeated using the list of preferred vendors until each of  
23 the uploaded barcodes has been assigned a designation in  
24 step 247. The products which could not be found in any

1 database are assigned a "not found" designation in step  
2 249. The software then displays a message to the user  
3 which indicates which products could not be located in step  
4 251. This process is then repeated to create a shopping  
5 cart list for each client.

6 To allow the system of the present invention to  
7 function with a RFID tagging system, the barcode  
8 information in vendor databases 117a - 117n simply has to  
9 be replaced with the corresponding RFID information.

10 Next, referring back to FIG. 2, the software sends  
11 each item on the clients' shopping lists to the appropriate  
12 vendors' e-commerce websites 121a - 121n using XML via  
13 Internet 119 in step 109. Currently, XML is the standard  
14 method of transmitting such information. However, it  
15 should be apparent to one skilled in the art that  
16 additional methods of transmitting such information will  
17 become available and can be utilized with the present  
18 invention. If login or account information is required by  
19 some vendors, the software utilizes vendor account database  
20 111 to transmit the login information along with the  
21 shopping cart list. A web browser is opened for each the  
22 e-commerce websites utilized. The shopping cart of each  
23 website is displayed populated with the uploaded items and  
24 corresponding quantities.

1       The user may then complete the ordering in step 211 by  
2   confirming that each shopping cart has the correct items  
3   and quantities. Typically, the e-commerce websites can be  
4   used to add/remove items and/or change quantities if the  
5   user desires. Once the user is satisfied with each  
6   shopping cart list, the user may execute the order on each  
7   e-commerce website.

8       The software application of the present invention also  
9   allows a user to create and store lists of items which a  
10  client orders repeatedly. The lists for user accounts can  
11  be created on the fly using the software of the present  
12  invention. The application allows the user not only to  
13  create and modify the lists on the client's behalf but also  
14  allows the user to view and modify the existing lists of  
15  the client.

16       The user can also use the software to print the lists  
17  in the desired format. To accomplish this, the application  
18  sends the list to a system server that prints the list in  
19  the desired format and displays the list to the user on the  
20  user's system. The user can print the list from his system.  
21  The lists can also be sent to the shopping cart on the  
22  dealer's website for the client account.

23       Referring next to FIG. 3, shown is an alternate  
24  embodiment of the present invention in which vendor



1 identification barcodes are utilized in addition to client  
2 identification barcodes. To utilize this embodiment  
3 requires that the user first must obtain catalogues from  
4 all of the vendors from which the user desires to order  
5 products. In each catalogue, a barcode is provided next to  
6 the display or description of each item. The barcode can  
7 either be a proprietary barcode assigned to each item by  
8 the vendor or it may be the standard barcode which is  
9 assigned to each product (e.g., UPC, ISBN, etc.).

10 The user must also install the software of the present  
11 invention on his/her computer and acquire a barcode  
12 scanner. For some vendors, the user must input a username  
13 and password into the program so that the software program  
14 can later connect to that particular vendor's website.  
15 This information is stored in vendor account database 111.

16 Once the user has acquired the correct catalogues and  
17 barcode scanner and installed the software, the user is  
18 ready to utilize the system of the present invention.  
19 First, utilizing scanner 105, the user scans the client  
20 identification barcode assigned to the user's current  
21 client in step 300. The user then scans the vendor  
22 identification barcode of the first vendor in step 301.  
23 The vendor identification barcode may be printed directly  
24 on the catalogue or on any data carrier capable of being

1 scanned by barcode scanner 105. Next, the user scans all  
2 the products from the vendor's catalogue which the client  
3 desires to order in step 303. To order multiple quantities  
4 of a single item, the user can scan the barcode multiple  
5 times or the user can first scan the product barcode and  
6 then a quantity barcode. For example, to order fifteen  
7 quantities of a particular product, the user would first  
8 scan the barcode related to the product, scan a quantity  
9 barcode indicating a quantity of ten, and then scan a  
10 quantity barcode indicating a quantity of five.

11 A user may also order items from a particular vendor  
12 by scanning the standard barcodes (e.g., UPC-A, UPC-E,  
13 ISBN, etc.) located on most products. For example, if a  
14 user could not find the entry for a particular soft drink  
15 in the vendor's catalogue, the user could scan the UPC  
16 barcode directly off of the soft drink itself.

17 After the user has scanned all of the desired products  
18 for the first vendor, the user next scans the  
19 identification barcode of the next vendor in step 305. The  
20 user may then scan all of the products which the user  
21 desires to order from the second vendor. This process is  
22 repeated for each vendor through which the user desires to  
23 place an order. If the user must order products for  
24 another client as decided in step 306, the user simply

1 scans the next client identification barcode in step 301  
2 and repeats the ordering process.

3       Once the user has scanned all the desired products for  
4 ordering, the user connects scanner 105 to computer 109 and  
5 launches a software application to upload the barcode  
6 information in step 307. Depending upon the specific type  
7 of scanner and/or software application, the barcode  
8 information may be automatically acquired by the software  
9 program or the user may have to initiate a manual upload.  
10 The software application then separates the barcode  
11 information according to each vendor and creates a shopping  
12 list for each client in step 309. The vendor  
13 identification barcodes are used to assign a designation to  
14 each item in the shopping list to identify which products  
15 should be ordered from which vendor.

16       Next, in step 311, the software program replaces the  
17 quantity barcodes in each shopping list utilizing the  
18 procedure already described in FIG. 2A. The software  
19 application then sends each shopping list to each vendor's  
20 e-commerce website in step 313 via XML (XML is the standard  
21 by which most e-commerce websites communicate such types of  
22 information). A web browser is then launched on computer  
23 109 showing each shopping cart fully populated with the  
24 scanned items in step 315. The user may then review the

1 shopping cart of each vendor and click "order" or  
2 "purchase" once the user has verified each order is correct  
3 in step 317. This process is advantageous because it does  
4 not require the utilization of a multitude of vendor  
5 product databases 117 which may take a great deal of memory  
6 to store depending upon the size of each database.

7 While the foregoing embodiments of the invention have  
8 been set forth in considerable detail for the purposes of  
9 making a complete disclosure, it should be evident to one  
10 skilled in the art that multiple changes may be made to the  
11 aforementioned description without departing from the  
12 spirit of the invention.